

## ABSTRACT OF THE DISCLOSURE

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3 The invention provides a method and system for integrating a CAM-based  
4 ASIC that will allow lookups to keep up with transmission speeds over optical fibers.  
5 The lookup table includes chips with CAM banks. Each chip contains entries from only a  
6 certain range of the address space, within each chip the entries are divided into several  
7 banks. Each bank contains entries of the same prefix length. Depending on the number of  
8 entries in each prefix length on each chip several banks may be required to store these  
9 entries. Each bank contains entries contained in a particular address range. Each address  
10 lookup will activate one bank per prefix length in order to get a match. A Content Com-  
11 parable Memory (CCM) is contained within each CAM bank; this CCM stores and com-  
12 pares the least possible address that will match the entries in the table with the incoming  
13 address. If the incoming address is found to be greater or equal to the data stored in the  
14 CCM but less than the data in the next bank's CCM which contains addresses of the same  
15 prefix length, the incoming address will be directed to the rest of the CAM bank for com-  
16 parison.